

ABSTRACT

An active noise insulation wall includes an active sound reduction apparatus disposed on an upper end surface of a noise insulation wall. The active sound reduction apparatus comprises a combination of an active acoustic control cell and a sound tube. The active acoustic control cell controls a coming noise such that a diffracted sound pressure component of the coming noise at the upper end surface of the noise insulation wall is actively reduced. The sound tube decreases a sound wave of a frequency different from a target frequency of the active acoustic control cell. Thus, the active noise insulation wall can effectively reduce noises including many frequency components.